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# Isosorbide

National Cancer Institute

## Source

National Cancer Institute. *Isosorbide*. NCI Thesaurus. Code C60773.

An organic nitrate with vasodilator activity. Isosorbide relaxes vascular smooth muscle by formation of the free radical nitric oxide (NO), which is identical to the endothelium-derived relaxing factor (EDRF). NO activates guanylyl cyclase, thereby increasing the synthesis of cGMP within smooth muscle. Elevated cGMP levels in smooth muscle activate cGMP-dependent kinase activity that leads to release of sequestered  $\text{Ca}^{2+}$ . In turn, free  $\text{Ca}^{2+}$  triggers dephosphorylation of light chain myosin and relaxation of peripheral arteries and veins. In addition isosorbide relaxes coronary arteries, thereby increasing the blood circulation through the ischemic area.